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(54) Method and apparatus using laser pulses to make an array of microcavity holes

A method and apparatus for forming an array of microcavities in the surface of a metal film uses an excimer laser or an ultrashort laser which to produce a beam of laser light pulses. An optical mask divides the beam into multiple beams and a lens system focuses the multiple beams onto the metal film. The device operates by generating multiple beams of laser pulses of a first diameter and then magnifying the pulses by a magnification factor less than 1 to produce multiple beams of pulses having a second diameter, less than the first diameter, which are applied to the metal film.

The magnification factor and the intensity of the laser is such that the fluence of the laser on the optical mask is not sufficient to cause ablation while the fluence on the metal film is sufficient to cause ablation. A diffractive optical element may be used in the device in place of the optical mask. The apparatus includes a quarter wave plate that converts the beam of laser light pulses into a beam of circularly polarized pulses. The apparatus also includes a device that homogenizes the intensity of the laser light pulses before they are applied to the optical mask.

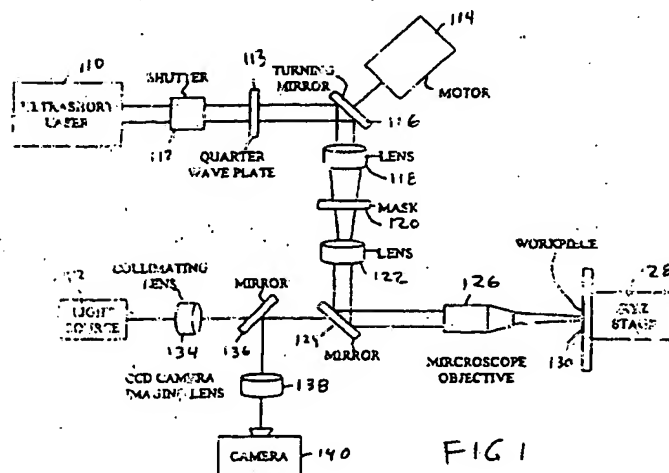


FIG 1



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The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 28 August 2002	Examiner Aran, C
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X: particularly relevant if taken alone Y: particularly relevant if combined with another document of the same category A: technological background C: non-written disclosure P: intermediate document			



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<input type="checkbox"/> prior art document taken alone <input type="checkbox"/> prior art document relevant if combined with another document of the same category <input type="checkbox"/> technological background <input type="checkbox"/> prior art disclosure <input type="checkbox"/> prior art document			

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